

cloth. Add glycerine and alcohol, of each 1 ounce. Perfume to suit. Use immediately after bathing, rubbing in well until dry.

Perspiring Hands.—I.—Take rectified eau de cologne, 50 parts (by weight); belladonna dye, 8 parts; glycerine, 3 parts; rub gently twice or three times a day with half a tablespoonful of this mixture. One may also employ chalk, carbonate of magnesia, rice starch, hot and cold baths of the hands (as hot and as cold as can be borne), during 6 minutes, followed by a solution of 4 parts of tannin in 32 of glycerine.

II.—Rub the hands several times per day with the following mixture:

	By weight
Rose water.....	125 parts
Borax.....	10 parts
Glycerine.....	8 parts

Hand Bleach.—Lanolin, 30 parts; glycerine, 20 parts; borax, 10 parts; eucalyptol, 2 parts; essential oil of almonds, 1 part. After rubbing the hands with this mixture, cover them with gloves during the night.

For the removal of developing stains, see Photography.

MASSAGE CREAMS:

Massage Application.—

White potash soap, shaved.....	20 parts
Glycerine.....	30 parts
Water.....	30 parts
Alcohol (90 per cent). ..	10 parts

Dissolve the soap by heating it with the glycerine and water, mixed. Add the alcohol, and for every 30 ounces of the solution add 5 or 6 drops of the mixture oleoso balsamica, German Pharmacopoeia. Filter while hot.

Medicated Massage Balls.—They are the balls of paraffine wax molded with a smooth or rough surface. Take equal parts of camphor and menthol, a few drops of oil of wintergreen and to this quantity add 10 times as much of paraffine. Useful in headaches, neuralgias, and rheumatic affections, and many other afflictions of the skin and bones. The method of using them is to roll the ball over the affected part by the aid of the palm of the hand with pressure. Continue until relief is obtained or a sensation of warmth. The only external method for the treatment of all kinds of headaches is the menthol medicated massage ball. Keep wrapped in foil in a cool place.

Casein Massage Cream.—The basis of the modern massage cream is casein. Casein is now produced very cheaply in the powdered form, and by treatment with glycerine and perfumes it is possible to turn out a satisfactory cream. The following formula is suggested:

Skimmed milk.....	1 gallon
Water of ammonia...	1 ounce
Acetic acid.....	1 ounce
Oil of rose geranium	1 drachm
Oil of bitter almond.	1 drachm
Oil of anise.....	2 drachms
Cold cream (see below), enough.	
Carmine enough to color.	

Add the water of ammonia to the milk and let it stand 24 hours. Then add the acetic acid and let it stand another 24 hours. Then strain through cheese cloth and add the oils. Work this thoroughly in a Wedgwood mortar, adding enough carmine to color it a delicate pink. To the product thus obtained add an equal amount of cold cream made by the formula herewith given:

White wax.....	4 ounces
Spermaceti.....	4 ounces
White petrolatum....	12 ounces
Rose water.....	14 ounces
Borax.....	80 grains

Melt the wax, spermaceti, and petrolatum together over a water bath; dissolve the borax in the rose water and add to the melted mass at one time. Agitate violently. Presumably the borax solution should be of the same temperature as the melted mass.

Massage Skin Foods.—

This preparation is used in massage for removing wrinkles:

I.—White wax.....	$\frac{1}{2}$ ounce
Spermaceti.....	$\frac{1}{2}$ ounce
Cocoanut oil.....	1 ounce
Lanolin.....	1 ounce
Oil of sweet almonds	2 ounces

Melt in a porcelain dish, remove from the fire, and add

Orange-flower water...	1 ounce
Tincture of benzoin...	3 drops

Beat briskly until creamy.

II.—Snow-white cold cream.....	4 ounces
Lanolin.....	4 ounces
Oil of theobroma...	4 ounces
White petrolatum oil	4 ounces
Distilled water....	4 ounces

In hot weather add	
Spermaceti.....	1 $\frac{1}{2}$ drachms
White wax.....	2 $\frac{1}{2}$ drachms

In winter the two latter are left out and the proportion of cocoa butter is modified. Prepared and perfumed in proportion same as cold cream.

- III.—White petrolatum 7 av. ounces
 Paraffine wax.... ½ ounce
 Lanolin..... 2 av. ounces
 Water..... 3 fluidounces
 Oil of rose..... 3 drops
 Vanillin..... 2 grains
 Alcohol..... 1 fluidrachm

Melt the paraffine, add the lanolin and petrolatum, and when these have melted pour the mixture into a warm mortar, and, with constant stirring, incorporate the water. When nearly cold add the oil and vanillin, dissolved in the alcohol.

Preparations of this kind should be rubbed into the skin vigorously, as friction assists the absorbed fat in developing the muscles, and also imparts softness and fullness to the skin.

SKIN BLEACHES, BALMS, LOTIONS, ETC.:

See also Cleaning Methods and Photography for removal of stains caused by photographic developers.

Astringent Wash for Flabby Skin.—

This is used to correct coarse pores, and to remedy an oily or flabby skin. Apply with sponge night and morning:

- Cucumber juice..... 1½ ounces
 Tincture of benzoin.. ½ ounce
 Cologne..... 1 ounce
 Elder-flower water... 5 ounces

Put the tincture of benzoin in an 8-ounce bottle, add the other ingredients, previously mixed, and shake slightly. There will be some precipitation of benzoin in this mixture, but it will settle out, or it may be strained out through cheese cloth.

Bleaching Skin Salves.—A skin-bleaching action, due to the presence of hydrogen peroxide, is possessed by the following mixtures:

- I.—Lanolin..... 30 parts
 Bitter almond oil... 10 parts

Mix and stir with this salve base a solution of

- Borax..... 1 part
 Glycerine..... 15 parts
 Hydrogen peroxide.. 15 parts

For impure skin the following composition is recommended:

- II.—White mercurial ointment..... 5 grams
 Zinc ointment..... 5 grams
 Lanolin..... 30 grams
 Bitter almond oil... 10 grams

And gradually stir into this a solution of

- Borax..... 2 grams
 Glycerine..... 30 grams
 Rose water..... 10 grams
 Concentrated nitric acid..... 5 drops

- III.—Lanolin..... 30 grams
 Oil sweet almond... 10 grams
 Borax..... 1 gram
 Glycerine..... 15 grams
 Solution hydrogen peroxide..... 15 grams

Mix the lanolin and oil, then incorporate the borax previously dissolved in the mixture of glycerine and peroxide solution.

IV.—Ointment ammoniac

- mercury..... 5 grams
 Ointment zinc oxide. 5 grams
 Lanolin..... 30 grams
 Oil sweet almond... 10 grams
 Borax..... 2 grams
 Glycerine..... 30 grams
 Rose water..... 10 grams
 Nitric acid, C. P.... 5 drops

Prepare in a similar manner as the foregoing. Rose oil in either ointment makes a good perfume. Both ointments may, of course, be employed as a general skin bleach, which, in fact, is their real office—cosmetic creams.

Emollient Skin Balm.—

- Quince seed..... ½ ounce
 Water..... 7 ounces
 Glycerine..... 1½ ounces
 Alcohol..... 4½ ounces
 Salicylic acid..... 6 grains
 Carbolic acid..... 10 grains
 Oil of bay..... 10 drops
 Oil of cloves..... 5 drops
 Oil of orange peel... 10 drops
 Oil of wintergreen... 8 drops
 Oil of rose..... 2 drops

Digest the quince seed in the water for 24 hours, and then press through a cloth; dissolve the salicylic acid in the alcohol; add the carbolic acid to the glycerine; put all together, shake well, and bottle.

Skin Lotion.—

- Zinc sulphocarbo- late..... 30 grains
 Alcohol (90 per cent) 4 fluidrachms
 Glycerine..... 2 fluidrachms
 Tincture of cochineal..... 1 fluidrachm
 Orange-flower water..... 1½ fluidounces
 Rose water (triple) to make..... 6 fluidounces

Skin Discoloration.—Discoloration of the neck may be removed by the use of acids, the simplest of which is that in buttermilk, but if the action of this is too slow try 4 ounces of lactic acid, 2 of glycerine, and 1 of rose water. These will mix without heating. Apply several times daily with a soft linen rag; pour a small quantity into a saucer and dip the cloth into this. If the skin becomes sore use less of the remedy and allay the redness and smarting with a good cold cream. It is always an acid that removes freckles and discolorations, by burning them off. It is well to be slow in its use until you find how severe its action is. It is not wise to try for home making any of the prescriptions which include corrosive sublimate or any other deadly poison. Peroxide of hydrogen diluted with 5 times as much water, also will bleach discolorations. Do not try any of these bleaches on a skin freshly sunburned. For that, wash in hot water, or add to the hot water application enough witch-hazel to scent the water, and after that has dried into the skin it will be soon enough to try other applications.

Detergent for Skin Stains.—Moritz Weiss has introduced a detergent paste which will remove stains from the skin without attacking it, is non-poisonous, and can be used without hot water. Moisten the hands with a little cold water, apply a small quantity of the paste to the stained skin, rub the hands together for a few minutes, and rinse with cold water. The preparation is a mixture of soft soap and hard tallow, melted together over the fire and incorporated with a little emery powder, flint, glass, sand, quartz, pumice stone, etc., with a little essential oil to mask the smell of the soap. The mixture sets to a mass like putty, but does not dry hard. The approximate proportions of the ingredients are: Soft soap, 30 per cent; tallow, 15 per cent; emery powder, 55 per cent, and a few drops of essential oil.

If an extra detergent quality is desired, 4 ounces of sodium carbonate may be added, and the quantity of soap may be reduced. Paste thus made will attack grease, etc., more readily, but it is harder on the skin.

Removing Inground Dirt.—

Egg albumen.....	8 parts
Boric acid.....	1 part
Glycerine	32 parts
Perfume to suit.	

Distilled water to make. 50 parts
Dissolve the boric acid in a sufficient quantity of water; mix the albumen and

glycerine and pass through a silk strainer. Finally, mix the two fluids and add the residue of water.

Every time the hands are washed, dry on a towel, and then moisten them lightly but thoroughly with the liquid, and dry on a soft towel without rubbing. At night, on retiring, apply the mixture and wipe slightly or just enough to take up superfluous liquid; or, better still, sleep in a pair of cotton gloves.

TOILET CREAMS:

Almond Cold Creams.—A liquid almond cream may be made by the appended formula. It has been known as milk of almond:

I.—Sweet almonds....	5 ounces
White castile soap.	2 drachms
White wax.....	2 drachms
Spermaceti.....	2 drachms
Oil of bitter almonds.....	10 minims
Oil of bergamot...	20 minims
Alcohol	6 fluidounces
Water, a sufficient quantity.	

Beat the almonds in a smooth mortar until as much divided as their nature will admit; then gradually add water in very small quantities, continuing the beating until a smooth paste is obtained; add to this, gradually, one pint of water, stirring well all the time. Strain the resulting emulsion without pressure through a cotton cloth previously well washed to remove all foreign matter. If new, the cloth will contain starch, etc., which must be removed. Add, through the strainer, enough water to bring the measure of the strained liquid to 1 pint. While this operation is going on let the soap be shaved into thin ribbons, and melted, with enough water to cover it, over a very gentle fire or on a water bath. When fluid add the wax and spermaceti in large pieces, so as to allow them to melt slowly, and thereby better effect union with the soap. Stir occasionally. When all is melted place the soapy mixture in a mortar, run into it slowly the emulsion, blending the two all the while with the pestle. Care must be taken not to add the emulsion faster than it can be incorporated with the soap. Lastly add the alcohol in which the perfumes have been previously dissolved, in the same manner, using great care.

This preparation is troublesome to make and rather expensive, and it is perhaps no better for the purpose than glycerine. The mistake is often made of applying the latter too freely, its "stickiness" being unpleasant, and it is

best to dilute it largely with water. Such a lotion may be made by mixing

Glycerine.....	1 part
Rose water.....	9 parts

Plain water may, of course, be used as the diluent, but a slightly perfumed preparation is generally considered more desirable. The perfume may easily be obtained by dissolving a very small proportion of handkerchief "extract" or some essential oil in the glycerine, and then mixing with plain water.

II.—White wax.....	$\frac{1}{4}$ ounce
Spermaceti.....	$2\frac{1}{2}$ ounces
Oil of sweet almonds.....	$2\frac{1}{2}$ ounces
Melt, remove from the fire, and add	
Rose water.....	$1\frac{1}{2}$ ounces

Beat until creamy; not until cold. When the cream begins to thicken add a few drops of oil of rose. Only the finest almond oil should be used. Be careful in weighing the wax and spermaceti. These precautions will insure a good product.

III.—White wax.....	4 ounces
Spermaceti.....	3 ounces
Sweet almond oil.....	6 fluidounces
Glycerine.....	4 fluidounces
Oil of rose geranium.....	1 fluidrachm
Tincture of benzoin.....	4 fluidrachms

Melt the wax and spermaceti, add the oil of sweet almonds, then beat in the glycerine, tincture of benzoin, and oil of rose geranium. When all are incorporated to a smooth, creamy mass, pour into molds.

IV.—Sweet almonds, blanchd.....	5 ounces
Castile soap, white.....	120 grains
White wax.....	120 grains
Spermaceti.....	120 grains
Oil of bitter almonds.....	10 drops
Oil of bergamot.....	20 drops
Alcohol.....	6 fluidounces
Water, sufficient.	

Make an emulsion of the almonds with water so as to obtain 16 fluidounces of product, straining through cotton which has previously been washed to remove starch. Dissolve the soap with the aid of heat in the necessary amount of water to form a liquid, add the wax and spermaceti, continue the heat until the latter is melted, transfer to a mortar, and incorporate the almond emulsion

slowly with constant stirring until all has been added and a smooth cream has been formed. Finally, add the two volatile oils.

V.—Melt, at moderate heat,

	By weight.
White wax.....	100 parts
Spermaceti.....	1,000 parts

Then stir in

	By weight.
Almond oil.....	500 parts
Rose water.....	260 parts

And scent with

	By weight.
Bergamot oil.....	10 parts
Geranium oil.....	5 parts
Lemon oil.....	4 parts

VI.—Castor oil.....	500 parts
White wax.....	100 parts
Almond oil.....	150 parts

Melt at moderate heat and scent with

	By weight.
Geranium oil.....	6 parts
Lemon oil.....	5 parts
Bergamot oil.....	10 parts

VII.—Almond oil.....	400 parts
Lanoline.....	200 parts
White wax.....	60 parts
Spermaceti.....	60 parts
Rose water.....	300 parts

VIII.—White wax.....	6 parts
Tallow, freshly tried out.....	4 parts
Spermaceti.....	2 parts
Oil of sweet almonds.....	6 parts

Melt together and while still hot add, with constant stirring, 1 part of sodium carbonate dissolved in 79 parts of hot water. Stir until cold. Perfume to the taste.

IX.—Ointment of rose water...	1 ounce
Oil of sweet almonds.....	1 fluidounce
Glycerine.....	1 fluidounce
Boric acid.....	100 grains
Solution of soda.....	$2\frac{1}{4}$ fluidounces
Mucilage of quince seed.	4 fluidounces
Water enough to make.....	40 fluidounces
Oil of rose, oil of bitter almonds, of each sufficient to perfume.	

Heat the ointment, oil, and solution of soda together, stirring constantly until an emulsion or saponaceous mixture is

formed. Then warm together the glycerine, acid, and mucilage and about 30 fluidounces of water; mix with the emulsion, stir until cold, and add the remainder of the water. Lastly, add the volatile oils.

The rose-water ointment used should be the "cold cream" of the United States Pharmacopœia.

X. — Spermaceti....	2 ounces
White wax....	2 ounces
Sweet almond oil.....	14 fluidounces
Water, distilled	7 fluidounces
Borax, powder	60 grains
Coumarin.....	$\frac{1}{2}$ grain
Oil of bergamot	24 drops
Oil of rose.....	6 drops
Oil of bitter almonds....	8 drops
Tincture of ambergris.....	5 drops

Melt the spermaceti and wax, add the sweet almond oil, incorporate the water in which the borax has previously been dissolved, and finally add the oils of bergamot, rose, and bitter almond.

XI. — Honey.....	2 av. ounces
Castile soap, white powder	1 av. ounce
Oil sweet almonds.....	26 fluidounces
Oil bitter almonds.....	1 fluidrachm
Oil bergamot..	$\frac{1}{2}$ fluidrachm
Oil cloves	15 drops
Peru balsam...	1 fluidrachm
Liquor potassa.	
Solution carmine, of each sufficient.	

Mix the honey with the soap in a mortar, and add enough liquor potassa (about 1 fluidrachm) to produce a nice cream. Mix the volatile oils and balsam with the sweet almond oil, mix this with the cream, and continue the trituration until thoroughly mixed. Finally add, if desired, enough carmine solution to impart a rose tint.

XII. — White wax....	800 parts
Spermaceti.....	800 parts
Sweet almond oil.....	5,600 parts
Distilled water..	2,800 parts
Borax.....	50 parts
Bergamot oil...	20 parts
Attar of rose....	5 parts
Coumarin.....	0.1 part

Add for each pound of the cream 5 drops of etheric oil of bitter almonds, and 3 drops tincture of ambra. Proceed as in making cold cream.

The following also makes a fine cream:

XIII. — Spermaceti.....	3 parts
White wax.....	2 parts
Oil of almonds, fresh.....	12 parts
Rose water, double	1 part
Glycerine, pure...	1 part

Melt on a water bath the spermaceti and wax, add the oil (which should be fresh), and pour the whole into a slightly warmed mortar, under constant and lively stirring, to prevent granulation. Continue the trituration until the mass has a white, creamy appearance, and is about the consistence of butter at ordinary temperature. Add, little by little, under constant stirring, the orange-flower water and glycerine mixed, and finally the perfume as before. Continue the stirring for 15 or 20 minutes, then immediately put into containers.

Chappine Cream. —

Quince seed.....	2 drachms
Glycerine.....	$1\frac{1}{2}$ ounces
Water.....	$1\frac{1}{2}$ ounces
Lead acetate.....	10 grains
Flavoring, sufficient.	

Macerate the quince seed in water, strain, add the glycerine and lead acetate, previously dissolved in sufficient water; flavor with jockey club or orange essence.

Cucumber Creams. —

I. — White wax.....	3 ounces
Spermaceti.....	3 ounces
Benzoinated lard....	8 ounces
Cucumbers.....	3 ounces

Melt together the wax, spermaceti, and lard, and infuse in the liquid the cucumbers previously grated. Allow to cool, stirring well; let stand a day, remelt, strain and again stir the "cream" until cold.

II. — Benzoinated lard....	5 ounces
Suct.....	3 ounces
Cucumber juice.....	10 ounces
Proceed as in making cold cream.	

Glycerine Creams. —

I. — Oil of sweet almonds.....	100 parts
White wax.....	13 parts
Glycerine, pure....	25 parts
Add a sufficient quantity of any suitable perfume.	

Melt, on the water bath, the oil, wax, and glycerine together, remove and as the mass cools down add the perfume in sufficient quantity to make a creamy mass.

- II.—Quince seed..... 1 ounce
 Boric acid..... 16 grains
 Starch..... 1 ounce
 Glycerine..... 16 ounces
 Carbolic acid..... 30 minims
 Alcohol..... 12 ounces
 Oil of lavender..... 30 minims
 Oil of rose..... 10 drops
 Extract of white rose 1 ounce
 Water enough to make 64 ounces

Dissolve the boric acid in a quart of water and in this solution macerate the quince seed for 3 hours; then strain. Heat together the starch and the glycerine until the starch granules are broken, and mix with this the carbolic acid. Dissolve the oils and the extract of rose in the alcohol, and add to the quince-seed mucilage; then mix all together, strain, and add water enough to make the product weigh 64 ounces.

- III.—Glycerine..... 1 ounce
 Borax..... 2 drachms
 Boracic acid..... 1 drachm
 Oil rose geranium... 30 drops
 Oil bitter almond... 15 drops
 Milk..... 1 gallon

Heat the milk until it curdles and allow it to stand 12 hours. Strain it through cheese cloth and allow it to stand again for 12 hours. Mix in the salts and glycerine and triturate in a mortar, finally adding the odors and coloring if wanted. The curdled milk must be entirely free from water to avoid separation. If the milk will not curdle fast enough the addition of 1 ounce of water ammonia to a gallon will hasten it. Take a gallon of milk, add 1 ounce ammonia water, heat (not boil), allow to stand 24 hours, and no trouble will be found in forming a good base for the cream.

IV.—This is offered as a substitute for cucumber cream for toilet uses. Melt 15 parts, by weight, of gelatin in hot water containing 15 parts, by weight, of boracic acid as well as 150 parts, by weight, of glycerine; the total amount of water used should not exceed 300 parts, by weight. It may be perfumed or not.

Lanolin Creams.—

- I.—Anhydrous lanolin. 650 parts
 Peach-kernel oil... 200 parts
 Water..... 150 parts
 Perfume with about 15 drops of ionone or 20 drops of synthetic ylang-ylang.
 II.—Lanolin..... 40 parts
 Olive oil..... 15 parts
 Paraffine ointment.. 10 parts

- Aqua naphæ..... 10 parts
 Distilled water..... 15 parts
 Glycerine..... 5 parts
 Boric acid..... 4 parts
 Borax..... 4 parts
 Geranium oil, sufficient.
 Extract, triple, of ylang-ylang, quantity sufficient.

- III.—Anhydrous lanolin. 650 drachms
 Almond oil..... 200 drachms
 Water..... 150 drachms
 Oil of ylang-ylang. 5 drops

Preparations which have been introduced years ago for the care of the skin and complexion are the glycerine gélées, which have the advantage over lanolin that they go further, but present the drawback of not being so quickly absorbed by the skin. These products are filled either into glasses or into tubes. The latter way is preferable and is more and more adopted, owing to the convenience of handling.

A good recipe for such a gélée is the following:

Moisten white tragacanth powder, 50 parts, with glycerine, 200 parts, and spirit of wine, 100 parts, and shake with a suitable amount of perfume; then quickly mix and shake with warm distilled water, 650 parts.

A transparent slime will form immediately which can be drawn off at once.

Mucilage Creams.—

- I.—Starch..... 30 parts
 Carrageen mucilage. 480 parts
 Boric acid..... 15 parts
 Glycerine..... 240 parts
 Cologne water..... 240 parts

Boil the starch in the carrageen mucilage, add the boric acid and the glycerine. Let cool, and add the cologne water.

- II.—Linseed mucilage... 240 parts
 Boric acid..... 2 parts
 Salicylic acid..... 1.3 parts
 Glycerine..... 60 parts
 Cologne water..... 120 parts
 Rose water..... 120 parts

Instead of the cologne water any extracts may be used. Lilac and ylang-ylang are recommended.

Witch-Hazel Creams.—

- I.—Quince seed..... 90 grains
 Boric acid..... 8 grains
 Glycerine..... 4 fluidounces
 Alcohol..... 6 fluidounces
 Carbolic acid..... 6 drachms
 Cologne water.... 4 fluidounces
 Oil lavender flowers..... 40 drops

Glycerite starch. . . . 4 av. ounces
Distilled witch-hazel extract enough
to make 32 fluidounces

Dissolve the boric acid in 16 ounces of the witch-hazel extract, macerate the quince seed in the solution for 3 hours, strain, add the glycerine, carbolic acid, and glycerite, and mix well. Mix the alcohol, cologne water, lavender oil, and mucilages, incorporate with the previous mixture, and add enough witch-hazel extract to bring to the measure of 32 fluidounces.

II.—Quince seed 4 ounces
Hot water 16 ounces
Glycerine 32 ounces
Witch-hazel water . . 128 ounces
Boric acid 6 ounces
Rose extract 2 ounces
Violet extract 1 ounce

Macerate the quince seed in the hot water; add the glycerine and witch-hazel, in which the boric acid has been previously dissolved; let the mixture stand for 2 days, stirring occasionally; strain and add the perfume.

Skin Cream for Collapsible Tubes.—

I.—White vaseline 6 ounces
White wax 1 ounce
Spermaceti 5 drachms
Subchloride bismuth 6 drachms
Attar of rose 6 minims
Oil of bitter almonds 1 minim
Rectified spirit $\frac{1}{2}$ ounce

Melt the vaseline, wax, and spermaceti together, and while cooling incorporate the subchloride of bismuth (in warm mortar). Dissolve the oils in the alcohol, and add to the fatty mixture, stirring all until uniform and cold. In cold weather the quantities of wax and spermaceti may be reduced.

II.—Lanolin 1 ounce
Almond oil 1 ounce
Oleate of zinc (powder) 3 drachms
Extract of white rose 1 $\frac{1}{2}$ drachms
Glycerine 2 drachms
Rose water 2 drachms

Face Cream Without Grease.—

Quince seed 10 parts
Boiling water 1,000 parts
Borax 5 parts
Boric acid 5 parts
Glycerine 100 parts
Alcohol, 94 per cent. 125 parts
Attar of rose, quantity sufficient to perfume.

Macerate the quince seed in half of the boiling water, with frequent agitations, for 2 hours and 30 minutes, then

strain off. In the residue of the boiling water dissolve the borax and boric acid, add the glycerine and the perfume, the latter dissolved in the alcohol. Now add, little by little, the colate of quince seed, under constant agitation, which should be kept up for 5 minutes after the last portion of the colate is added.

TOILET MILKS:

Cucumber Milk.—

Simple cerate 2 pounds
Powdered borax 11 $\frac{1}{2}$ ounces
Powdered castile soap 10 ounces
Glycerine 26 ounces
Alcohol 24 ounces
Cucumber juice 32 ounces
Water to 5 gallons
Ionone 1 drachm
Jasmine $\frac{1}{2}$ drachm
Neroli $\frac{1}{2}$ drachm
Rhodinol 15 minims

To the melted cerate in a hot water bath add the soap and stir well, keeping up the heat until perfectly mixed. Add 8 ounces of borax to 1 gallon of boiling water, and pour gradually into the hot melted soap and cerate; add the remainder of the borax and hot water, then the heated juice and glycerine, and lastly the alcohol. Shake well while cooling, set aside for 48 hours, and siphon off any water that may separate. Shake well, and repeat after standing again if necessary; then perfume.

Cucumber Juice.—It is well to make a large quantity, as it keeps indefinitely. Washed unpeeled cucumbers are grated and pressed; the juice is heated, skimmed and boiled for 5 minutes, then cooled and filtered. Add 1 part of alcohol to 2 parts of juice, let stand for 12 hours or more, and filter until clear.

Glycerine Milk.—

Glycerine 1,150 parts
Starch, powdered . . . 160 parts
Distilled water 400 parts
Tincture of benzoin . . 20 parts

Rub up 80 parts of the starch with the glycerine, then put the mixture on the steam bath and heat, under continuous stirring, until it forms a jellylike mass. Remove from the bath and stir in the remainder of the starch. Finally, add the water and tincture and stir till homogeneous.

Lanolin Toilet Milk.—

White castile soap,
powdered 22 grains
Lanolin 1 ounce
Tincture benzoin . . . 12 drachms
Water, enough.

Dissolve the soap in 2 fluidounces of warm water, also mix the lanolin with 2 fluidounces of warm water; then incorporate the two with each other, finally adding the tincture. The latter may be replaced by 90 grains of powdered borax.

Jasmine Milk.—To 25 parts of water add gradually, with constant stirring, 1 part of zinc white, 2 quarts of grain spirit, and 0.15 to 0.25 part of glycerine; finally stir in 0.07 to 0.10 part of jasmine essence. Filter the mixture and fill into glass bottles. For use as a cosmetic, rub on the raspberry paste on retiring at night, and in the morning use the jasmine milk to remove the paste from the skin. The two work together in their effect.

SUNBURN AND FRECKLE REMEDIES.

I.—Apply over the affected skin a solution of corrosive sublimate, 1 in 500, or, if the patient can stand it, 1 in 300, morning and evening, and for the night apply emplastrum hydrargyri compositum to the spots. In the morning remove the plaster and all remnants of it by rubbing fresh butter or cold cream over the spots.

For redness of the skin apply each other day zinc oxide ointment or ointment of bismuth subnitrate.

II.—Besnier recommends removal of the mercurial ointment with green soap, and the use, at night, of an ointment composed of vaseline and Vigo's plaster (emplastrum hydrargyri compositum), in equal parts. In the morning wash off with soap and warm water, and apply the following:

Vaseline, white..... 20 parts
Bismuth carbonate... 5 parts
Kaolin..... 5 parts

Mix, and make an ointment.

III.—Leloir has found the following of service. Clean the affected part with green soap or with alcohol, and then apply several coats of the following:

Acid chrysophanic... 15 parts
Chloroform..... 100 parts

Mix. Apply with a camel's-hair pencil.

When the application dries thoroughly, go over it with a layer of traumaticine. This application will loosen itself in several days, when the process should be repeated.

IV.—When the skin is only slightly discolored use a pomade of salicylic acid, or apply the following:

Acid chrysophanic,
from..... 1 to 4 parts
Acid salicylic..... 1 to 2 parts
Collodion..... 40 parts

V.—When there is need for a more complicated treatment, the following is used:

(a) Corrosive sublimate 1 part
Orange-flower water..... 7,500 parts
Acid, hydrochloric, dilute..... 500 parts
(b) Bitter almonds.... 4,500 parts
Glycerine..... 2,500 parts
Orange-flower water..... 25,000 parts

Rub up to an emulsion in a porcelain capsule. Filter and add, drop by drop, and under constant stirring, 5 grams of tincture of benzoin. Finally mix the two solutions, adding the second to the first.

This preparation is applied with a sponge, on retiring, to the affected places, and allowed to dry on.

VI.—According to Brocq the following should be penciled over the affected spots:

Fresh pure milk..... 50 parts
Glycerine..... 30 parts
Acid, hydrochloric, concentrated..... 5 parts
Ammonium chlorate. 3 parts

VII.—Other external remedies that may be used are lactic acid diluted with 3 volumes of water, applied with a glass rod; dilute nitric acid, and, finally, peroxide of hydrogen, which last is a very powerful agent. Should it cause too much inflammation, the latter may be assuaged by using an ointment of zinc oxide or bismuth subnitrate—or one may use the following:

Kaolin..... 4 parts
Vaseline..... 10 parts
Glycerine..... 4 parts
Magnesium carbonate 2 parts
Zinc oxide..... 2 parts

Freckle Remedies.—

I.—Poppy oil..... 1 part
Lead acetate..... 2 parts
Tincture benzoin.... 1 part
Tincture quillaia.... 5 parts
Spirit nitrous ether... 1 part
Rose water..... 95 parts

Saponify the oil with the lead acetate; add the rose water, and follow with the tinctures.

II.—Chloral hydrate..... 2 drachms
Carbolic acid..... 1 drachm

Tincture iodine..... 60 drops
Glycerine..... 1 ounce

Mix and dissolve. Apply with a camel's-hair pencil at night.

III.—Distilled vinegar... 660 parts
Lemons, cut in small pieces..... 135 parts
Alcohol, 85 per cent..... 88 parts
Lavender oil..... 23 parts
Water..... 88 parts
Citron oil..... 6 parts

This mixture is allowed to stand for 3 or 4 days in the sun and filtered. Coat, by means of a sponge before retiring, the places of the skin where the freckles are and allow to dry.

Freckles and Liver Spots.—Modern dermatological methods of treating freckles and liver spots are based partly on remedies that cause desquamation and those that depigmentate (or destroy or neutralize pigmentation). Both methods may be distinguished in respect to their effects and mode of using into the following: The active ingredients of the desquamative pastes are reductives which promote the formation of epithelium and hence expedite desquamation.

There are many such methods, and especially to be mentioned is that of Unna, who uses resorcin for the purpose. Lassar makes use of a paste of naphthol and sulphur.

Sunburn Remedies.—

I.—Zinc sulphocarbonate..... 1 part
Glycerine..... 20 parts
Rose water..... 70 parts
Alcohol, 90 per cent..... 8 parts
Cologne water... 1 part
Spirit of camphor. 1 part

II.—Borax..... 4 parts
Potassium chlorate 2 parts
Glycerine..... 10 parts
Alcohol..... 4 parts
Rose water to make 90 parts

III.—Citric acid..... 2 drachms
Ferrous sulphate (cryst.)..... 18 grains
Camphor..... 2 grains
Elder-flower water 3 fluidounces

IV.—Potassium carbonate..... 3 parts
Sodium chloride.. 2 parts
Orange-flower water..... 15 parts
Rose water..... 65 parts

V.—Boroglycerine, 50 per cent..... 1 part
Ointment of rose water..... 9 parts

VI.—Sodium bicarbonate..... 1 part
Ointment of rose water..... 7 parts

VII.—Bicarbonate of soda 2 drachms
Powdered borax... 1 drachm
Compound tincture of lavender..... 1½ drachms
Glycerine..... 1 ounce
Rose water..... 4 ounces

Dissolve the soda and borax in the glycerine and rose water, and add the tincture. Apply with a small piece of sponge 2 or 3 times a day. Then gently dry by dabbing with a soft towel.

VIII.—Quince seeds..... 2 drachms
Distilled water... 10 ounces
Glycerine..... 2 ounces
Alcohol, 94 per cent..... 1 ounce
Rose water..... 2 ounces

Boil the seeds in the water for 10 minutes, then strain off the liquid, and when cold add to it the glycerine, alcohol, and rose water.

IX.—White soft soap... 2½ drachms
Glycerine..... 1½ drachms
Almond oil..... 11 drachms

Well mix the glycerine and soap in a mortar, and very gradually add the oil, stirring constantly until perfectly mixed.

X.—Subnitrate of bismuth..... 1½ drachms
Powdered French chalk..... 30 grains
Glycerine..... 2 drachms
Rose water..... 1½ ounces

Mix the powders, and rub down carefully with the glycerine; then add the rose water. Shake the bottle before use.

XI.—Glycerine cream.. 2 drachms
Jordan almonds.. 4 drachms
Rose water..... 5 ounces
Essential oil of almonds..... 3 drops

Blanch the almonds, and then dry and beat them up into a perfectly smooth paste; then mix in the glycerine cream and essential oil. Gradually add the rose water, stirring well after each addition; then strain through muslin.

Tan and Freckle Lotion.—

Solution A:
Potassium iodide, iodine, glycerine, and infusion rose.
Dissolve the potassium iodide in a

small quantity of the infusion and a drachm of the glycerine; with this fluid moisten the iodine in a glass of water and rub it down, gradually adding more liquid, until complete solution has been obtained; then stir in the remainder of the ingredients, and bottle the mixture.

Solution B:

Sodium thiosulphate and rose water. With a small camel's-hair pencil or piece of fine sponge apply a little of solution A to the tanned or freckled surface, until a slight or tolerably uniform brownish yellow skin has been produced. At the expiration of 15 or 20 minutes moisten a piece of cambric, lint, or soft rag with B and lay it upon the affected part, removing, squeezing away the liquid, soaking it afresh, and again applying until the iodine stain has disappeared. Repeat the process thrice daily, but diminish the frequency of application if tenderness be produced.

A Cure for Tan.—Bichloride of mercury, in coarse powder, 10 grains; distilled water, 1 pint. Agitate the two together until a complete solution is obtained. Add $\frac{1}{2}$ ounce of glycerine. Apply with a small sponge as often as agreeable. This is not strong enough to blister and skin the face in average cases. It may be increased or reduced in strength by adding to or taking from the amount of bichloride of mercury. Do not forget that this last ingredient is a powerful poison and should be kept out of the reach of children and ignorant persons.

Improved Carron Oil.—Superior to the old and more suitable. A desirable preparation for burns, tan, freckle, sunburn, scalds, abrasions, or lung affections. Does not oxidize so quickly or dry up so rapidly and less liable to rancidity.

Linseed oil.....	2 ounces
Limewater.....	2 ounces
Paraffine, liquid.....	1 ounce

Mix the linseed oil and water, and add the paraffine. Shake well before using.

LIVER SPOTS.

I.—Corrosive sublimate.....	1 part
White sugar.....	190 parts
White of egg.....	34 parts
Lemon juice.....	275 parts
Water to make....	2,500 parts

Mix the sublimate, sugar, and albumen intimately, then add the lemon juice and water. Dissolve, shake well, and after standing an hour, filter. Ap-

ply in the morning after the usual ablutions, and let dry on the face.

II.—Bichloride of mercury, in coarse powder, 8 grains; witch-hazel, 2 ounces; rose water, 2 ounces.

Agitate until a solution is obtained. Mop over the affected parts. Keep out of the way of ignorant persons and children.

TOILET POWDERS:

Almond Powders for the Toilet.—

I.—Almond meal.....	6,000 parts
Bran meal.....	3,000 parts
Soap powder.....	600 parts
Bergamot oil.....	50 parts
Lemon oil.....	15 parts
Clove oil.....	15 parts
Neroli oil.....	6 parts

II.—Almond meal.....	7,000 parts
Bran meal.....	2,000 parts
Violet root.....	900 parts
Borax.....	350 parts
Bitter almond oil.....	18 parts
Palmarosa oil.....	36 parts
Bergamot oil.....	10 parts

III.—Almond meal.....	3,000 parts
Bran meal.....	3,000 parts
Wheat flour.....	3,000 parts
Sand.....	100 parts
Lemon oil.....	40 parts
Bitter almond oil.....	10 parts

Bath Powder.—

Borax.....	4 ounces
Salicylic acid.....	1 drachm
Extract of cassia.....	1 drachm
Extract of jasmine....	1 drachm
Oil of lavender.....	20 minims

Rub the oil and extracts with the borax and salicylic acid until the alcohol has evaporated. Use a heaping teaspoonful to the body bath.

Brunette or Rachelle.—

Base.....	9 pounds
Powdered Florentine orris.....	1 pound
Perfume the same.	
Powdered yellow ocher.... (av.)	3 ounces 120 grains
Carmin No. 40.....	60 grains

Rub down the carmine and ocher with alcohol in a mortar, and spread on glass to dry; then mix and sift.

Violet Poudre de Riz.—

I.—Cornstarch.....	7 pounds
Rice flour.....	1 pound
Powdered talc.....	1 pound
Powdered orris root.....	1 pound
Extract of cassia.....	3 ounces
Extract of jasmine....	1 ounce

II.—Cheaper.

Potato starch.....	8	pounds
Powdered talc.....	1	pound
Powdered orris.....	1	pound
Extract of cassia.....	3	ounces

Barber's Powder.—

Cornstarch.....	5	pounds
Precipitated chalk...	3	pounds
Powdered talc.....	2	pounds
Oil of neroli.....	1	drachm
Oil of cedrat.....	1	drachm
Oil of orange.....	2	drachms
Extract of jasmine...	1	ounce

Rose Poudre de Riz.—

I.—Cornstarch.....	9	pounds
Powdered talc.....	1	pound
Oil of rose.....	1½	drachms
Extract of jasmine...	6	drachms

II.—Potato starch.....	9	pounds
Powdered talc.....	1	pound
Oil of rose.....	½	drachm
Extract of jasmine...	½	ounce

Ideal Cosmetic Powder.—The following combines the best qualities that a powder for the skin should have:

Zinc, white.....	50	parts
Calcium carbonate, precipitated.....	300	parts
Stearite, best white..	50	parts
Starch, wheat, or rice	100	parts
Extract white rose, triple.....	3	parts
Extract jasmine, tri- ple.....	3	parts
Extract orange flow- er, triple.....	3	parts
Extract of cassia, tri- ple.....	3	parts
Tincture of myrrh..	1	part

Powder the solids and mix thoroughly by repeated siftings.

Flesh Face Powder.—

Base.....	9	pounds
Powdered Florentine orris.....	1	pound
Carmin No. 40.....	250	grains
Extract of jasmine..	100	minims
Oil of neroli.....	20	minims
Vanillin.....	5	grains
Artificial musk.....	30	grains
White heliotropin...	30	grains
Coumarin.....	1	grain

Rub the carmine with a portion of the base and alcohol in a mortar, mixing the perfume the same way in another large mortar, and adding the orris. Mix and sift all until specks of carmine disappear on rubbing.

White Face Powder.—

Base.....	9	pounds
Powdered Florentine orris.....	1	pound

Perfume the same. Mix and sift.

Talcum Powders.—Talc, when used as a toilet powder should be in a state of very fine division. Antiseptics are sometimes added in small proportion, but these are presumably of little or no value in the quantity allowable, and may prove irritating. For general use, at all events, the talcum alone is the best and the safest. As a perfume, rose oil may be employed, but on account of its cost, rose geranium oil is probably more frequently used. A satisfactory proportion is ½ drachm of the oil to a pound of the powder. In order that the perfume may be thoroughly disseminated throughout the powder, the oil should be triturated first with a small portion of it; this should then be further triturated with a larger portion, and, if the quantity operated on be large, the final mixing may be effected by sifting. Many odors besides that of rose would be suitable for a toilet powder. Ylang-ylang would doubtless prove very attractive, but expensive.

The following formulas for other varieties of the powder may prove useful:

Violet Talc.—

I.—Powdered talc.....	14	ounces
Powdered orris root.	2	ounces
Extract of cassia....	½	ounce
Extract of jasmine..	¼	ounce

Rose Talc.—

II.—Powdered talc.	5	pounds
Oil of rose.....	½	drachm
Extract of jasmine..	4	ounces

Tea-Rose Talc.—

III.—Powdered talc.....	5	pounds
Oil of rose.....	50	drops
Oil of wintergreen..	4	drops
Extract of jasmine..	2	ounces

Borated Apple Blossom.—

IV.—Powdered talc.....	22	pounds
Magnesium carbon- ate.....	2½	pounds
Powdered boric acid	1	pound

Mix.

Carnation pink blos- som (Schimmel's)	2	ounces
Extract of treffe....	2	drachms

To 12 drachms of this mixture add:

Neroli.....	1	drachm
Vanillin.....	½	drachm
Alcohol to.....	3	ounces

Sufficient for 25 pounds.

V.—Talcum.....	8	ounces
Starch.....	8	ounces
Oil of neroli.....	10	drops
Oil of ylang-ylang.....	5	drops
VI.—Talcum.....	12	ounces
Starch.....	4	ounces
Orris root.....	2	ounces
Oil of bergamot.....	12	drops
VII.—Talcum.....	14	ounces
Starch.....	2	ounces
Lanolin.....	$\frac{1}{2}$	ounce
Oil of rose.....	10	drops
Oil of neroli.....	5	drops

TOILET VINEGARS:**Pumillo Toilet Vinegar.—**

Alcohol, 80 per cent	1,600	parts
Vinegar, 10 per cent.....	840	parts
Oil of pinu spumillo.....	44	parts
Oil of lavender.....	4	parts
Oil of lemon.....	2	parts
Oil of bergamot.....	2	parts

Dissolve the oils in the alcohol, add the vinegar, let stand for a week and filter.

Vinaigre Rouge.—

Acetic acid.....	24	parts
Alum.....	3	parts
Peru balsam.....	1	part
Carmine, No. 40....	12	parts
Ammonia water....	6	parts
Rose water, distilled.....	575	parts
Alcohol.....	1,250	parts

Dissolve the balsam of Peru in the alcohol, and the alum in the rose water. Mix the two solutions, add the acetic acid, and let stand overnight. Dissolve the carmine in the ammonia water and add to mixture. Shake thoroughly, let stand for a few minutes, then decant.

"Beauty Water."—

Fresh egg albumen ..	500	parts
Glycerine	50	parts
50% Alcohol	25	parts
Lemon oil	2	parts
Lavender oil	2	parts
Oil of thyme	2	parts

Mix the ingredients well together. When first mixed the liquid becomes flocculent, but after standing for 2 or 3 days clears up—sometimes becomes perfectly clear, and may be decanted. It forms a light, amber-colored liquid that remains clear for months.

At night, before retiring, pour about a teaspoonful of the water in the palm of the hand, and rub it over the face and neck, letting it dry on. In the morning, about an hour before the bath, repeat the oper-

ation, also letting the liquid dry on the skin. The regular use of this preparation for 4 weeks will give the skin an extraordinary fineness, clearness, and freshness.

Rottmanner's Beauty Water.—Koller says that this preparation consists of 1 part of camphor, 5 parts of milk of sulphur, and 50 parts of rose water.

Birch Waters.—Birch water, which has many cosmetic applications, especially as a hair wash, or an ingredient in hair washes, may be prepared as follows:

I.—Alcohol, 96 per cent	3,500	parts
Water.....	700	parts
Potash soap.....	200	parts
Glycerine.....	150	parts
Oil of birch buds....	50	parts
Essence of spring flowers.....	100	parts
Chlorophyll, quantity sufficient to color.		

Mix the water with 700 parts of the alcohol, and in the mixture dissolve the soap. Add the essence of spring flowers and birch oil to the remainder of the alcohol, mix well, and to the mixture add, little by little, and with constant agitation, the soap mixture. Finally, add the glycerine, mix thoroughly, and set aside for 8 days, filter and color the filtrate with chlorophyll, to which is added a little tincture of saffron. To use, add an equal volume of water to produce a lather.

II.—Alcohol, 96 per cent.....	2,000	parts
Water.....	500	parts
Tincture of cantharides.....	25	parts
Salicylic acid.....	25	parts
Glycerine.....	100	parts
Oil of birch buds.....	40	parts
Bergamot oil.....	30	parts
Geranium oil.....	5	parts

Dissolve the oils in the alcohol, add the acid and tincture of cantharides; mix the water and glycerine and add, and, finally, color as before.

III.—Alcohol.....	30,000	parts
Birch juice.....	3,000	parts
Glycerine.....	1,000	parts
Bergamot oil.....	90	parts
Vanillin.....	10	parts
Geranium oil.....	50	parts
Water.....	14,000	parts

Violet Ammonia Water.—Most preparations of this character consist of either coarsely powdered ammonium carbonate, with or without the addition of ammonia water, or of a coarsely powdered mixture, which slowly evolves the odor of ammonia, the whole being perfumed by the addition of volatile oil, pomade essences, or handkerchief extract. The following are typical formulas:

I.—Moisten coarsely powdered ammonium carbonate, contained in a suitable bottle, with a mixture of concentrated tincture of orris root, $2\frac{1}{2}$ ounces; aromatic spirit of ammonia, 1 drachm; violet extract, 3 drachms.

II.—Fill suitable bottles with coarsely powdered ammonium carbonate and add to the salt as much of the following solution as it will absorb: Oil of orris, 5 minims; oil of lavender flowers, 10 minims; violet extract, 30 minims; stronger water of ammonia, 2 fluid-ounces.

III.—The following is a formula for a liquid preparation: Extract violet, 8 fluidrachms; extract cassia, 8 fluidrachms; spirit of rose, 4 fluidrachms; tincture of orris, 4 fluidrachms; cologne spirit, 1 pint; spirit of ammonia, 1 ounce. Spirit of ionone may be used instead of extract of violet.

Violet Witch-Hazel.—

Spirit of ionone.....	$\frac{1}{2}$ drachm
Rose water.....	6 ounces
Distilled extract of witch-hazel enough to make.....	16 ounces

Cotton

BLEACHING OF COTTON:

I.—**Bleaching by Steaming.**—The singed and washed cotton goods are passed through hydrochloric acid of 2° Bé. Leave them in heaps during 1 hour, wash, pass through sodium hypochlorite of 10° Bé. diluted with 10 times the volume of water. Let the pieces lie in heaps for 1 hour, wash, pass through caustic soda lye of 38° Bé. diluted with 8 times its volume of water, steam, put again through sodium chloride, wash, acidulate slightly with hydrochloric acid, wash and dry. Should the whiteness not be sufficient, repeat the operations.

II.—Bleaching with Calcium Sulphite.

—The cotton goods are impregnated with 1 part, by weight, of water, 1 part of caustic lime, and $\frac{1}{2}$ part of bisulphite of 40° Bé.; next steamed during 1-2 hours at a pressure of $\frac{1}{2}$ atmosphere, washed, acidulated, washed and dried. The result is as white a fabric as by the old method with caustic lime, soda, and calcium chloride. The bisulphite may also be replaced by calcium hydrosulphite, and, instead of steaming, the fabric may be boiled for several hours with calcium sulphite.

III.—**Bleaching of Vegetable Fibers with Hydrogen Peroxide.**—Pass the pieces through a solution containing caustic soda, soap, hydrogen peroxide, and burnt magnesia. The pieces are piled in heaps on carriages; the latter are shoved into the well-known apparatus of Mather & Platt (kier), and the liquid is pumped on for 6 hours, at a pressure of $\frac{2}{3}$ atmosphere. Next wash, acidulate, wash and dry. The bleaching may also be done on an ordinary reeling vat. For 5 pieces are needed about 1,000 parts, by weight, of water; 10 parts, by weight, of solid caustic soda; 1 part of burnt magnesia; 30 parts, by weight, of hydrogen peroxide. After 3-4 hours' boiling, wash, acidulate, wash and dry. The bleaching may also be performed by passing through barium peroxide, then through sulphuric acid or hydrochloric acid, and next through soda lye. It is practicable also to commence with the latter and finally give a treatment with hydrogen peroxide.

The whiteness obtained by the above process is handsomer than that produced by the old method with hypochlorites, and the fabric is weakened to a less extent.

TESTS FOR COTTON.

I.—Cotton, when freed from extraneous matter by boiling with potash, and afterwards with hydrochloric acid, yields pure cellulose or absorbent cotton, which, according to the U. S. P., is soluble in copper ammonium sulphate solution. The B. P. is more specific and states that cotton is soluble in a concentrated solution of copper ammonium sulphate. The standard test solution (B. P.) is made by dissolving 10 parts of copper sulphate in 160 parts of distilled water, and cautiously adding solution of ammonia to the liquid until the precipitate first formed is nearly dissolved. The product is then filtered and the filtrate made up to 200 parts with distilled

water. The concentrated solution is prepared by using a smaller quantity of distilled water.

II.—Schweitzer's reagent for textile fibers and cellulose is made by dissolving 10 parts of copper sulphate in 100 parts of water and adding a solution of 5 parts of potassium hydrate in 50 parts of water; then wash the precipitate and dissolve in 20 per cent ammonia until saturated. This solution dissolves cotton, linen, and silk, but not wool. The reagent is said to be especially useful in microscopy, as it rapidly dissolves cellulose, but has no action on lignin.

III.—Jandrier's Test for Cotton in Woolen Fabrics.—Wash the sample of fabric and treat with sulphuric acid (20 Bé.) for half an hour on the water bath. To 100 to 200 parts of this solution add 1 part resorcin, and overlay on concentrated sulphuric acid free from nitrous products. The heat developed is sufficient to give a color at the contact point of the liquids, but intensity of color may be increased by slightly heating. If the product resulting from treating the cotton is made up 1 in 1,000, resorcin will give an orange color; alphanaphthol a purple; gallic acid a green gradually becoming violet down in the acid; hydroquinone or pyrogallol a brown; morphine or codeine, a lavender; thymol or menthol a pink. Cotton may be detected in colored goods, using boneblack to decolorize the solution, if necessary.

IV.—Overbeck's test for cotton in woolen consists in soaking the fabric in an aqueous solution of alloxantine (1 in 10), and after drying expose to ammonia vapor and rinse in water. Woolen material is colored crimson, cotton remains blue.

V.—Liebermann's Test.—Dye the fabric for half an hour in fuchsine solution rendered light yellow by caustic soda solution and then washed with water—silk is colored dark red; wool, light red; flax, pink; and cotton remains colorless.

To Distinguish Cotton from Linen.—Take a sample about an inch and a half square of the cloth to be tested and plunge it into a tepid alcoholic solution of cyanine. After the coloring matter has been absorbed by the fiber, rinse it in water and then plunge into dilute sulphuric acid. If it is of cotton the sample will be almost completely bleached, while linen preserves the blue color almost unchanged. If the sample be then plunged in ammonia, the blue will be strongly reinforced.

Aromatic Cotton.—Aromatic cotton is produced as follows: Mix camphor, 5 parts; pine-leaf oil, 5 parts; clove oil, 5 parts; spirit of wine (90 per cent), 80 parts; and distribute evenly on cotton, 500 parts, by means of an atomizer. The cotton is left pressed together in a tightly closed tin vessel for a few days.

Cotton Degreasing.—Cotton waste, in a greasy condition, is placed in an acid-proof apparatus, where it is simultaneously freed from grease, etc., and prepared for bleaching by the following process, which is performed without the waste being removed from the apparatus: (1) treatment with a solvent, such as benzine; (2) steaming, for the purpose of vaporizing and expelling from the cotton waste the solvent still remaining in it after as much as possible of this has been recovered by draining; (3) treatment with a mineral acid; (4) boiling with an alkali lye; (5) washing with water.

COTTONSEED HULLS AS STOCK FOOD.

Cottonseed hulls or other material containing fiber difficult of digestion are thoroughly mixed with about 5 per cent of their weight of hydrochloric acid (specific gravity, 1.16), and heated in a closed vessel, provided with a stirrer, to a temperature of 212° to 300° F. The amount of acid to be added depends on the material employed and on the duration of the heating. By heating for 30 minutes the above percentage of acid is required, but the quantity may be reduced if the heating is prolonged. After heating, the substance is ground and at the same time mixed with some basic substances such as sodium carbonate, chalk, cottonseed kernel meal, etc., to neutralize the acid. During the heating, the acid vapors coming from the mixture may be led into a second quantity of material contained in a separate vessel, air being drawn through both vessels to facilitate the removal of the acid vapors.

COUNTERFEIT COINS—TO DETECT:

A solution of—

24 grains silver nitrate

15 drops nitric acid

1 fluidounce distilled water

Mix together thoroughly and apply to the coin with a glass rod. If any other metal is present in larger quantities than in the standard U. S. alloy, a black stain appears.

COUGH MIXTURES FOR CATTLE: See Veterinary Formulas.

COUGH MIXTURES AND REMEDIES:
See Cold and Cough Mixtures.

Court Plasters

(See also Plasters.)

Liquid Court Plaster.—I.—If soluble guncotton is dissolved in acetone in the proportion of about 1 part, by weight, of the former to 35 or 40 parts, by volume, of the latter, and half a part each of castor oil and glycerine be added, a colorless, elastic, and flexible film will form on the skin wherever it is applied. Unlike ordinary collodion it will not be likely to dry and peel off. If tinted very slightly with alkanet and saffron it can be made to assume the color of the skin so that when applied it is scarcely observable. A mixture of warm solution of sodium silicate and casein, about 9 parts of the former to 1 part of the latter, gelatinizes and forms a sort of liquid court plaster.

II.—In order to make liquid court plaster flexible, collodion, U. S. P., is the best liquid that can possibly be recommended. It may be made by weighing successively into a tarred bottle:

Collodion	4 av. ounces
Canada turpentine..	95 grains
Castor oil.....	57 grains

Before applying, the skin should be perfectly dry; each application or layer should be permitted to harden. Three or four coats are usually sufficient.

III.—Procure an ounce bottle and fill it three-fourths full of flexible collodion, and fill up with ether. Apply to cuts, bruises, etc., and it protects them and will not wash off. If the ether evaporates, leaving it too thick for use, have more ether put in to liquefy it. It is a good thing to have in the house and in the tool chest.

COW DISEASES AND THEIR REMEDIES:

See Veterinary Formulas.

CRAYONS:

See Pencils.

CRAYONS FOR GRAINING AND MARBLING.

Heat 4 parts of water and 1 part of white wax over a fire until the wax has

completely dissolved. Stir in 1 part of purified potash. When an intimate combination has taken place, allow to cool and add a proportionate quantity of gum arabic. With this mixture the desired colors are ground thick enough so that they can be conveniently rolled into a pencil with chalk. The desired shades must be composed on the grinding slab as they are wanted, and must not be simply left in their natural tone. Use, for instance, umber, Vandyke brown, and white lead for oak; umber alone would be too dark for walnut use. All the earth colors can be conveniently worked up. It is best to prepare 2 or 3 crayons of each set, mixing the first a little lighter by the addition of white lead and leaving the others a little darker. The pencils should be kept in a dry place and are more suitable for graining and marbling than brushes, since they can be used with either oil or water.

CRAYONS FOR WRITING ON GLASS:

See Etching, and Glass.

Cream

(See also Milk.)

Whipped Cream.—There are many ways to whip cream. The following is very highly indorsed: Keep the cream on ice until ready to whip. Take 2 earthen vessels about 6 inches in diameter. Into 1 bowl put 1 pint of rich sweet cream, 2 teaspoonfuls powdered sugar, and 5 drops of best vanilla extract. Add the white of 1 egg and beat with large egg beater or use whipping apparatus until 2 inches of froth has formed; skim off the froth into the other vessel and so proceed whipping and skimming until all the cream in the first vessel has been exhausted. The whipped cream will stand up all day and should be let stand in the vessel on ice.

Special machines have been constructed for whipping cream, but most dispensers prepare it with an ordinary egg beater. Genuine whipped cream is nothing other than pure cream into which air has been forced by the action of the different apparatus manufactured for the purpose; care must, however, be exercised in order that butter is not produced instead of whipped cream. To avoid this the temperature of the cream must be kept at a low degree and the whipping must not be too violent or prolonged; hence the following rules must be observed in order to produce the desired result:

1. Secure pure cream and as fresh as possible.
2. Surround the bowl in which the cream is being whipped with cracked ice, and perform the operation in a cool place.
3. As rapidly as the whipped cream arises, skim it off and place it in another bowl, likewise surrounded with ice.
4. Do not whip the cream too long or too violently.
5. The downward motion of the beater should be more forcible than the upward, as the first has a tendency to force the air into the cream, while the second, on the contrary, tends to expel it.
6. A little powdered sugar should be added to the cream after it is whipped, in order to sweeten it.
7. Make whipped cream in small quantities and keep it on ice.

I.—Cummins's Whipped Cream.—Place 12 ounces of rich cream on the ice for about 1 hour; then with a whipper beat to a consistency that will withstand its own weight.

II.—Eberle's Whipped Cream.—Take a pint of fresh, sweet cream, which has been chilled by being placed on the ice, add to it a heaping tablespoonful of powdered sugar and 2 ounces of a solution of gelatin (a spoonful dissolved in 2 ounces of water), whip slowly for a minute or two until a heavy froth gathers on top. Skim off the dense froth, and put in container for counter use; continue this until you have frothed all that is possible.

III.—Foy's Whipped Cream.—Use only pure cream; have it ice cold, and in a convenient dish for whipping with a wire whipper. A clear, easy, quick, and convenient way is to use a beater. Fill about one-half full of cream, and beat vigorously for 2 or 3 minutes; a little powdered sugar may be added before beating. The cream may be left in the beater, and placed on ice.

IV.—American Soda Fountain Company's Whipped Cream.—Take 2 earthen bowls and 2 tin pans, each 6 or 8 inches greater in diameter than the bowls; place a bowl in each pan, surround it with broken ice, put the cream to be whipped in 1 bowl, and whip it with a whipped cream churn. The cream should be pure and rich, and neither sugar nor gelatin should be added to it. As the whipped cream rises and fills the bowl, remove the churn, and skim off the whipped cream into the other bowl.

The philosophy of the process is that

the churn drives air into the cream, and blows an infinity of tiny bubbles, which forms the whipped cream; therefore, in churning, raise the dasher gently and slowly, and bring it down quickly and forcibly. When the second bowl is full of whipped cream, pour off the liquid cream, which has settled to the bottom, into the first bowl, and whip it again. Keep the whipped cream on ice.

The addition of an even teaspoonful of salt to 1 quart of sweet cream, before whipping, will make it whip up very readily and stiff, and stand up much longer and better.

CRESOL EMULSION.

One of the best starting points for the preparation is the "creosote" obtained from blast furnaces, which is rich in cresols and contains comparatively little phenols. The proportions used are: Creosote, 30 parts; soft soap, 10 parts; and solution of soda (10 per cent), 30 parts. Boil the ingredients together for an hour, then place aside to settle. The dark fluid is afterwards drained from any oily portion floating upon the top.

CREAM, VANISHING:

(Being a cream, a skin softener and a powder, combined in one.)

Precipitated chalk 1 part
Glycerine 1 part
Zinc stearate 1 part
Oil rose geranium sufficient

The powders are first to be intimately mixed together. The glycerine is to be diluted with an equal amount of water and the whole rubbed together most thoroughly. While the rubbing is being done, the perfume is to be added, gradually, a little at a time. Eight drops of oil rose geranium to each three ounces of the cream is the proper amount of perfume to use.

CROCUS.

The substance known as "crocus," which is so exceedingly useful as a polishing medium for steel, etc., may be very generally obtained in the cinders produced from coal containing iron. It will be easily recognized by its rusty color, and should be collected and reduced to a powder for future use. Steel burnishers may be brought to a high state of polish with this substance by rubbing them upon a buff made of soldiers' belt or hard wood. After this operation, the burnisher should be rubbed on a second buff charged with jewelers' rouge.

CRYSTAL:**Mineral Water Crystals.—**

Magnesium sulphate, dried	15 pounds
Sodium phosphate, dried	6 pounds
Iron sulphate, dried...	4 ounces
Potassium bicarbonate	5 pounds
Sodium bicarbonate...	15 pounds
Calcium sulphate, dried	2 ounces
Ammonium chloride, dried	1 pound

Mix all together well and then sift several times through a screen of at least 20 mesh. See that everything used in mixing is perfectly dry and mix together in a dry room.

Directions: Put one-half teaspoonful into an 8 or 10 ounce glass of ordinary drinking water, stir and drink. Keep package away from moisture so contents will not cake or harden.

CUSTARD POWDER:

Corn flour	7 pounds
Arrowroot	8 pounds
Oil of almond	20 drops
Oil of nutmegs	10 drops
Tincture of saffron to color.	

Mix the tincture with a little of the mixed flours; then add the essential oils and make into a paste; dry this until it can be reduced to a powder, and then mix all the ingredients by sifting several times through a fine hair sieve.

CUTLERY CEMENTS:

See Adhesives.

CYLINDER OIL:

See Lubricants.

CYMBAL METAL:

See Alloys.

Damaskeening

Damaskeening, practiced from most ancient times, consists in ornamentally inlaying one metal with another, followed usually by polishing. Generally gold or silver is employed for inlaying. The article to be decorated by damaskeening is usually of iron (steel) or copper; in Oriental (especially Japanese) work, also frequently of bronze, which has been blackened, or, at least, darkened, so that the damaskeening is effectively set off from the ground. If the design consists of lines, the grooves are dug out with the graver in such a manner that they are wider at the bot-

tom, so as to hold the metal forced in. Next, the gold or silver pieces suitably formed are laid on top and hammered in so as to fill up the opening. Finally the surface is gone over again, so that the surface of the inlay is perfectly even with the rest. If the inlays, however, are not in the form of lines, but are composed of larger pieces of certain outlines, they are sometimes allowed to project beyond the surface of the metal decorated. At times there are inlays again in the raised portions of another metal; thus, Japanese bronze articles often contain figures of raised gold inlaid with silver.

Owing to the high value which damaskeening imparts to articles artistically decorated, many attempts have been made to obtain similar effects in a cheaper manner. One is electro-etching, described further on. Another process for the wholesale manufacture of objects closely resembling damaskeened work is the following: By means of a steel punch, on which the decorations to be produced project in relief, the designs are stamped by means of a drop hammer or a stamping press into gold plated or silver plated sheet metal on the side which is to show the damaskeening, finally grinding off the surface, so that the sunken portions are again level. Naturally, the stamped portion, as long as the depth of the stamping is at least equal to the thickness of the precious metal on top, will appear inlaid.

It is believed that much of the early damaskeening was done by welding together iron and either a steel or an impure or alloyed iron, and treating the surface with a corroding acid that affected the steel or alloy without changing the iron.

The variety of damaskeening known as *koftegari* or *kufu-work*, practiced in India, was produced by rough-etching a metallic surface and laying on gold-leaf, which was imbedded so that it adhered only to the etched parts of the design.

Damaskeening by Electrolysis.—Damaskeening of metallic plates may be done by electrolysis. A copper plate is covered with an isolating layer of feeble thickness, such as wax, and the desired design is scratched in it by the use of a pointed tool. The plate is suspended in a bath of sulphate of copper, connecting it with the positive pole of a battery, while a second copper plate is connected with the negative pole. The current etches grooves wherever the wax has been removed. When enough has

been eaten away, remove the plate from the bath, cleanse it with a little hydrochloric acid to remove any traces of oxide of copper which might appear on the lines of the design; then wash it in plenty of water and place it in a bath of silver or nickel, connecting it now with the negative pole, the positive pole being represented by a leaf of platinum. After a certain time the hollows are completely filled with a deposit of silver or nickel, and it only remains to polish the plate, which has the appearance of a piece damaskeened by hand.

Damaskeening on Enamel Dials.—Dip the dial into molten yellow wax, trace on the dial the designs desired, penetrating down to the enamel. Dip the dial in a fluorhydric acid a sufficient length of time that it may eat to the desired depth. Next, wash in several waters, remove the wax by means of turpentine, i. e., leave the piece covered with wax immersed in essence of turpentine. By filling up the hollows thus obtained with enamel very pretty effects are produced.

DANDRUFF CURE:

See Hair Preparations.

DECALCOMANIA PROCESSES:

See also Chromos, Copying Processes, and Transfer Processes.

The decalcomania process of transferring pictures requires that the print (usually in colors) be made on a specially prepared paper. Prints made on decalcomania paper may be transferred in the reverse to chinaware, wood, celluloid, metal, or any hard smooth surface, and being varnished after transfer (or burnt in, in the case of pottery) acquire a fair degree of permanence. The original print is destroyed by the transfer.

Applying Decalcomania Pictures on Ceramic Products under a Glaze.—A biscuit-baked object is first coated with a mixture of alcohol, shellac, varnish, and liquid glue. Then the prepared picture print is transferred on to this adhesive layer in the customary manner. The glaze, however, does not adhere to this coating and would, therefore, not cover the picture when fused on. To attain this, the layer bearing the transfer picture, as well as the latter, are simultaneously coated with a dextrin solution of about 10 per cent. When this dextrin coating is dry, the picture is glazed.

The mixing proportions of the two solutions employed, as well as of the adhesive and the dextrin solutions, vary somewhat according to the physical conditions of the porcelain, its porosity, etc. The following may serve for an example: Dissolve 5 parts of shellac or equivalent gum in 25 parts of spirit and emulsify this liquid with 20 parts of varnish and 8 parts of liquid glue. After drying, the glaze is put on and the ware thus prepared is placed in the grate fire.

The process described is especially adapted for film pictures, i. e., for such as bear the picture on a cohering layer, usually consisting of collodion. It cannot be employed outright for gum pictures, i. e., for such pictures as are composed of different pressed surfaces, consisting mainly of gum or similar material. If this process is to be adapted to these pictures as well, the ware, which has been given the biscuit baking, is first provided with a crude glaze coating, whereupon the details of the process are carried out as described above with the exception that there is another glaze coating between the adhesive coat and the biscuit-baked ware. In this case the article is also immediately placed in the grate fire. It is immaterial which of the two kinds of metachromatypies (transfer pictures) is used, in every case the baking in the muffle, etc., is dropped. The transfer pictures may also be produced in all colors for the grate fire.

Decalcomania Paper.—Smooth un-sized paper, not too thick, is coated with the following solutions:

I.—Gelatin, 10 parts, dissolved in 300 parts warm water. This solution is applied with a sponge. The paper should be dried flat.

II.—Starch, 50 parts; gum tragacanth, dissolved in 600 parts of water. (The gum tragacanth is soaked in 300 parts of water; in the other 300 parts the starch is boiled to a paste; the two are then poured together and boiled.) The dried paper is brushed with this paste uniformly, a fairly thick coat being applied. The paper is then allowed to dry again.

III.—One part blood albumen is soaked in 3 parts water for 24 hours. A small quantity of sal ammoniac is added.

The paper, after having been coated with these three solutions and dried, is run through the printing press, the pictures, however, being printed reversed so that it may appear in its true position when transferred. Any colored inks may be used.

IV.—A transfer paper, known as "décalque rapide," invented by J. B. Duramy, consists of a paper of the kind generally used for making pottery transfers, but coated with a mixture of gum and arrowroot solutions in the proportion of $2\frac{1}{2}$ parts of the latter to 100 of the former. The coating is applied in the ordinary manner, but the paper is only semi-glazed. Furthermore, to decorate pottery ware by means of this new transfer paper, there is no need to immerse the ware in a bath in order to get the paper to draw off, as it will come away when moistened with a damp sponge, after having been in position for less than 5 minutes, whereas the ordinary papers require a much longer time.

Picture Transferrer.—A very weak solution of soft soap and pearlashes is used to transfer recent prints, such as illustrations from papers, magazines, etc., to unglazed paper, on the decalcomania principle. Such a solution is:

- I.—Soft soap..... $\frac{1}{2}$ ounce
 Pearlash..... 2 drachms
 Distilled water.... 16 fluidounces

The print is laid upon a flat surface, such as a drawing board, and moistened with the liquid. The paper on which the reproduction is required is laid over this, and then a sheet of thicker paper placed on the top, and the whole rubbed evenly and hard with a blunt instrument, such as the bowl of a spoon, until the desired depth of color in the transferrer is obtained. Another and more artistic process is to cover the print with a transparent sheet of material coated with wax, to trace out the pictures with a point and to take rubbings of the same after powdering with plumbago.

- II.—Hard soap..... 1 drachm
 Glycerine..... 30 grains
 Alcohol..... 4 fluidrachms
 Water..... 1 fluidounce

Dampen the printed matter with the solution by sponging, and proceed as with I.

DENTIST'S IMPRESSION WAX:

- French chalk 22
 Gum dammar (powdered) .. 12
 Stearin 8
 and Carmine to tint

Melt stearin and shake dammar into it, then add the chalk tinted with the carmine, and also some scent, such as 30 minims geranium oil.

Dentifrices

TOOTH POWDERS:

A perfect tooth powder that will clean the teeth and mouth with thoroughness need contain but few ingredients and is easily made. For the base there is nothing better than precipitated chalk; it possesses all the detergent and polishing properties necessary for the thorough cleansing of the teeth, and it is too soft to do any injury to soft or to defective or thinly enameled teeth. This cannot be said of pumice, cuttlebone, charcoal, kieselguhr, and similar abrasants that are used in tooth powders. Their use is reprehensible in a tooth powder. The use of pumice or other active abradant is well enough occasionally, by persons afflicted with a growth of tartar on the teeth, but even then it is best applied by a competent dentist. Abrading powders have much to answer for in hastening the day of the toothless race.

Next in value comes soap. Powdered white castile soap is usually an ingredient of tooth powders. There is nothing so effective for removing sordes or thickened mucus from the gums or mouth. But used alone or in too large proportions, the taste is unpleasant. Orris possesses no cleansing properties, but is used for its flavor and because it is most effective for masking the taste of the soap. Sugar or saccharine may be used for sweetening, and for flavoring almost anything can be used. Flavors should, in the main, be used singly, though mixed flavors lack the clean taste of simple flavors.

The most popular tooth powder sold is the white, saponaceous, wintergreen-flavored powder, and here is a formula for this type:

- I.—Precipitated chalk... 1 pound
 White castile soap... 1 ounce
 Florentine orris..... 2 ounces
 Sugar (or saccharine,
 2 grains)..... 1 ounce
 Oil of wintergreen... $\frac{1}{4}$ ounce

The first four ingredients should be in the finest possible powder and well dried. Triturate the oil of wintergreen with part of the chalk, and mix this with the balance of the chalk. Sift each ingredient separately through a sieve (No. 80 or finer), and mix well together, afterwards sifting the mixture 5 or 6 times. The finer the sieve and the more the mixture is sifted, the finer and lighter the powder will be.

This powder will cost about 15 cents a pound.

Pink, rose-flavored powder of the Caswell and Hazard, Hudnut, or McMahan type, once so popular in New York. It was made in two styles, with and without soap.

II.—Precipitated chalk...	1 pound
Florentine orris.....	2 ounces
Sugar.....	1½ ounces
White castile soap...	1 ounce
No. 40 carmine.....	15 grains
Oil of rose.....	12 drops
Oil of cloves.....	4 drops

Dissolve the carmine in an ounce of water of ammonia and triturate this with part of the chalk until the chalk is uniformly dyed. Then spread it in a thin layer on a sheet of paper and allow the ammonia to evaporate. When there is no ammoniacal odor left, mix this dyed chalk with the rest of the chalk and sift the whole several times until thoroughly mixed. Then proceed to make up the powder as in the previous formula, first sifting each ingredient separately and then together, being careful thoroughly to triturate the oils of rose and cloves with the orris after it is sifted and before it is added to the other powders. The oil of cloves is used to back up the oil of rose. It strengthens and accentuates the rose odor. Be careful not to get a drop too much, or it will predominate over the rose.

Violet Tooth Powder.—

Precipitated chalk...	1 pound
Florentine orris.....	4 ounces
Castile soap.....	1 ounce
Sugar.....	1½ ounces
Extract of violet.....	½ ounce
Evergreen coloring, R. & F., quantity sufficient.	

Proceed as in the second formula, dyeing the chalk with the evergreen coloring to the desired shade before mixing.

III.—Precipitated chalk...	16 pounds
Powdered orris....	4 pounds
Powdered cuttlefish bone.....	2 pounds
Ultramarine.....	9½ ounces
Geranium lake....	340 grains
Jasmine.....	110 minims
Oil of neroli.....	110 minims
Oil of bitter almonds.....	35 minims
Vanillin.....	50 grains
Artificial musk (Lautier's).....	60 grains
Saccharine.....	140 grains

Rub up the perfumes with 2 ounces of alcohol, dissolve the saccharine in warm

water, add all to the orris, and set aside to dry. Rub the colors up with water and some chalk, and when dry pass all through a mixer and sifter twice to bring out the color.

Camphorated and Carbolated Powders.

—A camphorated tooth powder may be made by leaving out the oil of wintergreen in the first formula and adding 1½ ounces of powdered camphor.

Carbolated tooth powder may likewise be made with the first formula by substituting 2 drachms of liquefied carbolic acid for the oil of wintergreen. But the tooth powder gradually loses the odor and taste of the acid. It is not of much utility anyway, as the castile soap in the powder is of far greater antiseptic power than the small amount of carbolic acid that can safely be combined in a tooth powder. Soap is one of the best antiseptics.

Alkaline salts, borax, sodium bicarbonate, etc., are superfluous in a powder already containing soap. The only useful purpose they might serve is to correct acidity of the mouth, and that end can be reached much better by rinsing the mouth with a solution of sodium bicarbonate. Acids have no place in tooth powders, the French Codex to the contrary notwithstanding.

Peppermint as a Flavor.—In France and all over Europe peppermint is the popular flavor, as wintergreen is in this country.

English apothecaries use sugar of milk and heavy calcined magnesia in many of their tooth powders. Neither has any particular virtue as a tooth cleanser, but both are harmless. Cane sugar is preferable to milk sugar as a sweetener, and saccharine is more efficient, though objected to by some; it should be used in the proportion of 2 to 5 grains to the pound of powder, and great care taken to have it thoroughly distributed throughout.

An antiseptic tooth powder, containing the antiseptic ingredients of listerine, is popular in some localities.

IV.—Precipitated chalk...	1 pound
Castile soap.....	5 drachms
Borax.....	3 drachms
Thymol.....	20 grains
Menthol.....	20 grains
Eucalyptol.....	20 grains
Oil of wintergreen..	20 grains
Alcohol.....	½ ounce

Dissolve the thymol and oils in the alcohol, and triturate with the chalk, and proceed as in the first formula.

One fault with this powder is the disagreeable taste of the thymol. This may be omitted and the oil of wintergreen increased to the improvement of the taste, but with some loss of antiseptic power.

Antiseptic Powder.—

V.—Boric acid.....	50 parts
Salicylic acid.....	50 parts
Dragon's blood...	20 parts
Calcium carbonate.....	1,000 parts
Essence spearmint.	12 parts

Reduce the dragon's blood and calcium carbonate to the finest powder, and mix the ingredients thoroughly. The powder should be used twice a day, or even oftener, in bad cases. It is especially recommended in cases where the enamel has become eroded from the effects of iron.

Menthol Tooth Powder.—Menthol leaves a cool and pleasant sensation in the mouth, and is excellent for fetid breath. It may be added to most formulas by taking an equal quantity of oil of wintergreen and dissolving in alcohol.

Menthol.....	1 part
Salol.....	8 parts
Soap, grated fine....	20 parts
Calcium carbonate..	20 parts
Magnesia carbonate	60 parts
Essential oil of mint.	2 parts

Powder finely and mix. If there is much tartar on the teeth it will be well to add to this formula from 10 to 20 parts of pumice, powdered very finely.

Tooth Powders and Pastes.—Although the direct object of these is to keep the teeth clean and white, they also prevent decay, if it is only by force of mere cleanliness, and in this way (and also by removing decomposing particles of food) tend to keep the breath sweet and wholesome. The necessary properties of a tooth powder are cleansing power unaccompanied by any abrading or chemical action on the teeth themselves, a certain amount of antiseptic power to enable it to deal with particles of stale food, and a complete absence of any disagreeable taste or smell. These conditions are easy to realize in practice, and there is a very large number of efficient and good powders, as well as not a few which are apt to injure the teeth if care is not taken to rinse out the mouth very thoroughly after using. These powders include some of the best cleansers, and have hence been admitted in the following recipes, mostly taken from English collections.

I.—Charcoal and sugar, equal weights. Mix and flavor with clove oil.

II.—Charcoal.....	156 parts
Red kino.....	156 parts
Sugar.....	6 parts

Flavor with peppermint oil.

III.—Charcoal.....	270 parts
Sulphate of quinine....	1 part
Magnesia.....	1 part

Scent to liking.

IV.—Charcoal.....	30 parts
Cream of tartar.....	8 parts
Yellow cinchona bark	4 parts
Sugar.....	15 parts

Scent with oil of cloves.

V.—Sugar.....	120 parts
Alum.....	10 parts
Cream of tartar.....	20 parts
Cochineal....	3 parts

VI.—Cream of tartar.....	1,000 parts
Alum.....	190 parts
Carbonate of magnesia..	375 parts
Sugar.....	375 parts
Cochineal....	75 parts
Essence Ceylon cinnamon.....	90 parts

Essence cloves..... 75 parts

Essence English peppermint... 45 parts

VII.—Sugar.....	200 parts
Cream of tartar.....	400 parts
Magnesia....	400 parts
Starch.....	400 parts
Cinnamon...	32 parts
Mace.....	11 parts
Sulphate of quinine....	16 parts
Carmine.....	17 parts

Scent with oil of peppermint and oil of rose.

VIII.—Bleaching powder.....	11 parts
Red coral....	12 parts

IX.—Red cinchona bark.....	12 parts
Magnesia....	50 parts
Cochineal....	9 parts
Alum.....	6 parts
Cream of tartar.....	100 parts

English pep- permint oil.	4 parts
Cinnamon oil	2 parts

Grind the first five ingredients separately, then mix the alum with the cochineal, and then add to it the cream of tartar and the bark. In the meantime the magnesia is mixed with the essential oils, and finally the whole mass is mixed through a very fine silk sieve.

X.—Whitewood charcoal...	250 parts
Cinchona bark.....	125 parts
Sugar.....	250 parts
Peppermint oil.....	12 parts
Cinnamon oil	8 parts

XI.—Precipitated chalk.....	750 parts
Cream of tar- tar.....	250 parts
Florence or- ris root....	250 parts
Sal ammoniac	60 parts
Ambergris...	4 parts
Cinnamon...	4 parts
Coriander...	4 parts
Cloves.....	4 parts
Rosewood...	4 parts

XII.—Dragon's blood.....	250 parts
Cream of tar- tar.....	30 parts
Florence or- ris root....	30 parts
Cinnamon...	16 parts
Cloves.....	8 parts

XIII.—Precipitated chalk.....	500 parts
Dragon's blood.....	250 parts
Red sandal- wood.....	125 parts
Alum.....	125 parts
Orris root...	250 parts
Cloves.....	15 parts
Cinnamon...	15 parts
Vanilla.....	8 parts
Rosewood...	15 parts
Carmine lake	250 parts
Carmine.....	8 parts

XIV.—Cream of tar- tar.....	150 parts
Alum.....	25 parts
Cochineal...	12 parts
Cloves.....	25 parts
Cinnamon...	25 parts
Rosewood...	6 parts

Scent with essence of rose.

XV.—Coral.....	20 parts
Sugar.....	20 parts
Wood char- coal.....	6 parts
Essence of ver- vain.....	1 part

XVI.—Precipitated chalk.....	500 parts
Orris root...	500 parts
Carmine.....	1 part
Sugar.....	1 part
Essence of rose.....	4 parts
Essence of ne- roli.....	4 parts

XVII.—Cinchona bark.....	50 parts
Chalk.....	100 parts
Myrrh.....	50 parts
Orris root...	100 parts
Cinnamon...	50 parts
Carbonate of ammonia...	100 parts
Oil of cloves.	2 parts

XVIII.—Gum arabic..	30 parts
Cutch.....	80 parts
Licorice juice.	550 parts
Cascarilla...	20 parts
Mastic.....	20 parts
Orris root...	20 parts
Oil of cloves..	5 parts
Oil of pepper- mint.....	15 parts
Extract of amber.....	5 parts
Extract of musk.....	5 parts

XIX.—Chalk.....	200 parts
Cuttlebone...	100 parts
Orris root...	100 parts
Bergamot oil..	2 parts
Lemon oil....	4 parts
Neroli oil....	1 part
Portugal oil..	2 parts

XX.—Borax.....	50 parts
Chalk.....	100 parts
Myrrh.....	25 parts
Orris root...	22 parts
Cinnamon...	25 parts

XXI.—Wood char- coal.....	30 parts
White honey.	30 parts
Vanilla sugar	30 parts
Cinchona bark.....	16 parts

Flavor with oil of peppermint.

XXII.—Syrup of 33° B.	38 parts
Cuttlebone...	200 parts
Carmine lake	30 parts
English oil of peppermint	5 parts

XXIII.—Red coral....	50 parts
Cinnamon....	12 parts
Cochineal....	6 parts
Alum.....	2½ parts
Honey.....	125 parts
Water.....	6 parts

Triturate the cochineal and the alum with the water. Then, after allowing them to stand for 24 hours, put in the honey, the coral, and the cinnamon. When the effervescence has ceased, which happens in about 48 hours, flavor with essential oils to taste.

XXIV.—Well-skimmed honey.....	50 parts
Syrup of peppermint....	50 parts
Orris root....	12 parts
Sal ammoniac	12 parts
Cream of tartar.....	12 parts
Tincture of cinnamon..	3 parts
Tincture of cloves.....	3 parts
Tincture of vanilla....	3 parts
Oil of cloves.	1 part

XXV.—Cream of tartar.....	120 parts
Pumice.....	120 parts
Alum.....	30 parts
Cochineal....	30 parts
Bergamot oil.	3 parts
Clove.....	3 parts

Make to a thick paste with honey or sugar.

XXVI.—Honey.....	250 parts
Precipitated chalk.....	250 parts
Orris root....	250 parts
Tincture of opium.....	7 parts
Tincture of myrrh.....	7 parts
Oil of rose....	2 parts
Oil of cloves..	2 parts
Oil of nutmeg	2 parts

XXVII.—Florentine orris.....	6 parts
Magnesium carbonate..	2 parts
Almond soap	12 parts
Calcium carbonate....	60 parts
Thymol.....	1 part
Alcohol, quantity sufficient.	

Powder the solids and mix. Dissolve the thymol in as little alcohol as possible, and add perfume in a mixture in equal parts of oil of peppermint, oil of clove,

oil of lemon, and oil of eucalyptus. About 1 minim of each to every ounce of powder will be sufficient.

XXVIII.—Myrrh, 10 parts; sodium chloride, 10 parts; soot, 5 parts; soap, 5 parts; lime carbonate, 500 parts.

XXIX.—Camphor, 5 parts; soap, 10 parts; saccharine, 0.25 parts; thymol, 0.5 parts; lime carbonate, 500 parts. Scent, as desired, with rose oil, sassafras oil, wintergreen oil, or peppermint oil.

XXX.—Powdered camphor, 6 parts; myrrh, 15 parts; powdered Peruvian bark, 6 parts; distilled water, 12 parts; alcohol of 80° F., 50 parts. Macerate the powders in the alcohol for a week and then filter.

XXXI.—Soap, 1; saccharine, 0.025; thymol, 0.05; lime carbonate, 50; sassafras essence, enough to perfume.

XXXII.—Camphor, 0.5; soap, 1; saccharine, 0.025; calcium carbonate, 50; oil of sassafras, or cassia, or of gaultheria, enough to perfume.

XXXIII.—Myrrh, 1; sodium chloride, 1; soap, 50; lime carbonate, 50; rose oil as required.

XXXIV.—Precipitated calcium carbonate, 60 parts; quinine sulphate, 2 parts; saponine, 0.1 part; saccharine, 0.1 part; carmine as required; oil of peppermint, sufficient.

XXXV.—Boracic acid, 100 parts; powdered starch, 50 parts; quinine hydrochlorate, 10 parts; saccharine, 1 part; vanillin (dissolved in alcohol), 1.5 parts.

Neutral Tooth Powder.—Potassium chlorate, 200 parts; starch, 200 parts; carmine lake, 40 parts; saccharine (in alcoholic solution), 1 part; vanillin (dissolved in alcohol), 1 part.

Tooth Powder for Children.—

Magnesia carbonate..	10 parts
Medicinal soap.....	10 parts
Sepia powder.....	80 parts
Peppermint oil, quantity sufficient to flavor.	

Flavorings for Dentifrice.—

I.—Sassafras oil, true....	1 drachm
Pinus pumilio oil....	20 minims
Bitter orange oil....	20 minims
Wintergreen oil.....	2 minims
Anise oil.....	4 minims
Rose geranium oil....	1 minim
Alcohol.....	1 ounce

Use according to taste.

II.—Oil of peppermint, English.....	4 parts
Oil of aniseed.....	6 parts

Oil of clove.....	1 part
Oil of cinnamon.....	1 part
Saffron.....	1 part
Deodorized alcohol.....	350 parts
Water.....	300 parts

Or, cassia, 4 parts, and vanilla, $\frac{1}{2}$ part, may be substituted for the saffron.

LIQUID DENTIFRICES AND TOOTH WASHES:

A French Dentifrice.—I.—A preparation which has a reputation in France as a liquid dentifrice is composed of alcohol, 96 per cent, 1,000 parts; Mitcham peppermint oil, 30 parts; aniseed oil, 5 parts; oil of *Acorus calamus*, 0.5 parts. Finely powdered cochineal and cream of tartar, 5 parts each, are used to tint the solution. The mixed ingredients are set aside for 14 days before filtering.

Sozodont.—

II.—The liquid tooth preparation "Sozodont" is said to contain: Soap powder, 60 parts; glycerine, 60 parts; alcohol, 360 parts; water, 220 parts; oils of peppermint, of aniseed, of clove, and of cinnamon, 1 part each; oil of wintergreen, 1-200 part.

III.—Thymol.....	2 grains
Benzoic acid.....	24 grains
Tincture eucalyptus..	2 drachms
Alcohol quantity sufficient to make 2 ounces.	

Mix. Sig.: A teaspoonful diluted with half a wineglassful of water.

IV.—Carbolic acid, pure...	2 ounces
Glycerine, 1,260°.....	1 ounce
Oil wintergreen.....	6 drachms
Oil cinnamon.....	3 drachms
Powdered cochineal..	$\frac{1}{2}$ drachm
S. V. R.....	40 ounces
Distilled water.....	40 ounces

Dissolve the acid in the glycerine with the aid of a gentle heat and the essential oils in the spirit; mix together, and add the water and cochineal; then let the preparation stand for a week and filter.

A mixture of caramel and cochineal coloring, N. F., gives an agreeable red color for saponaceous tooth washes. It is not permanent, however.

Variations of this formula follow:

V.—White castile soap....	1 ounce
Tincture of asarum....	2 drachms
Oil of peppermint.....	$\frac{1}{2}$ drachm
Oil of wintergreen.....	$\frac{1}{2}$ drachm
Oil of cloves.....	5 drops
Oil of cassia.....	5 drops
Glycerine.....	4 ounces
Alcohol.....	14 ounces
Water.....	14 ounces

VI.—White castile soap...	1 $\frac{1}{2}$ ounces
Oil of orange.....	10 minims
Oil of cassia.....	5 minims
Oil of wintergreen...	15 minims
Glycerine.....	3 ounces
Alcohol.....	8 ounces
Water enough to make 1 quart.	

VII.—White castile soap...	3 ounces
Glycerine.....	5 ounces
Water.....	20 ounces
Alcohol.....	30 ounces
Oil of peppermint...	1 drachm
Oil of wintergreen...	1 drachm
Oil of orange peel...	1 drachm
Oil of anise.....	1 drachm
Oil of cassia.....	1 drachm

Beat up the soap with the glycerine; dissolve the oils in the alcohol and add to the soap and glycerine. Stir well until the soap is completely dissolved.

VIII.—White castile soap....	1 ounce
Orris root.....	4 ounces
Rose leaves.....	4 ounces
Oil of rose.....	$\frac{1}{2}$ drachm
Oil of neroli.....	$\frac{1}{2}$ drachm
Cochineal.....	$\frac{1}{2}$ ounce
Diluted alcohol.....	2 quarts

If the wash is intended simply as an elixir for sweetening the breath, the following preparation, resembling the celebrated *eau de botot*, will be found very desirable:

IX.—Oil of peppermint....	30 minims
Oil of spearmint.....	15 minims
Oil of cloves.....	5 minims
Oil of red cedar wood.....	60 minims
Tincture of myrrh...	1 ounce
Alcohol.....	1 pint

Care must be taken not to confound the oil of cedar tops with the oil of cedar wood. The former has an odor like turpentine; the latter has the fragrance of the red cedar wood.

For a cleansing wash, a solution of soap is to be recommended. It may be made after the following formula:

X.—White castile soap...	1 ounce
Alcohol.....	6 ounces
Glycerine.....	4 ounces
Hot water.....	6 ounces
Oil of peppermint....	15 minims
Oil of wintergreen...	20 minims
Oil of cloves.....	5 minims
Extract of vanilla....	$\frac{1}{2}$ ounce

Dissolve the soap in the hot water and add the glycerine and extract of vanilla. Dissolve the oils in the alcohol, mix the solutions, and after 24 hours filter through paper.

It is customary to color such preparations. An agreeable brown-yellow tint may be given by the addition of a small quantity of caramel. A red color may be given by cochineal. The color will fade, but will be found reasonably permanent when kept from strong light.

TOOTH SOAPS AND PASTES:

Tooth Soaps.—

- I.—White castile soap.. 225 parts
Precipitated chalk.. 225 parts
Orris root..... 225 parts
Oil of peppermint.. 7 parts
Oil of cloves..... 4 parts
Water, a sufficient quantity.

- II.—Castile soap..... 100 drachms
Precipitated chalk.. 100 drachms
Powdered orris root. 100 drachms
White sugar..... 50 drachms
Rose water..... 50 drachms
Oil of cloves..... 100 drops
Oil of peppermint... 3 drachms

Dissolve the soap in water, add the rose water, then rub up with the sugar with which the oils have been previously triturated, the orris root and the precipitated chalk.

- III.—Potassium chlorate, 20 drachms; powdered white soap, 10 drachms; precipitated chalk, 20 drachms; peppermint oil, 15 drops; clove oil, 5 drops; glycerine, sufficient to mass. Use with a soft brush.

Saponaceous Tooth Pastes.—

- I.—Precipitated carbonate of lime... 90 parts
Soap powder..... 30 parts
Ossa sepia, powdered..... 15 parts
Tincture of cocaine 45 parts
Oil of peppermint. 6 parts
Oil of ylang-ylang. 0.3 parts
Glycerine..... 30 parts
Rose water to cause liquefaction. Carmine solution to color.

- II.—Precipitated carbonate of lime.. 150 parts
Soap powder..... 45 parts
Arrowroot..... 45 parts
Oil of eucalyptus . 2 parts
Oil of peppermint. 1 part
Oil of geranium .. 1 part
Oil of cloves..... 0.25 parts
Oil of aniseed.... 0.25 parts
Glycerine 45 parts
Chloroform water to cause liquefaction. Carmine solution to color.

Cherry Tooth Paste.—

- III.—Clarified honey... 100 drachms
Precipitated chalk 100 drachms
Powdered orris root..... 100 drachms
Powdered rose leaves..... 60 drops
Oil of cloves..... 55 drops
Oil of mace..... 55 drops
Oil of geranium.. 55 drops

Chinese Tooth Paste.—

- IV.—Powdered pumice 100 drachms
Starch..... 20 drachms
Oil of peppermint 40 drops
Carmine..... $\frac{1}{4}$ drachm

Eucalyptus Paste.—Forty drachms precipitated chalk, 11 drachms soap powder, 11 drachms wheaten starch, $\frac{1}{4}$ drachm carmine, 30 drops oil of peppermint, 30 drops oil of geranium, 60 drops eucalyptus oil, 2 drops oil of cloves, 12 drops oil of anise mixed together and incorporated to a paste, with a mixture of equal parts of glycerine and spirit.

Myrrh Tooth Paste.—

- Precipitated chalk 8 ounces
Orris..... 8 ounces
White castile soap. 2 ounces
Borax..... 2 ounces
Myrrh..... 1 ounce
Glycerine, quantity sufficient.

Color and perfume to suit.

A thousand grams of levigated powdered oyster shells are rubbed up with 12 drachms of cochineal to a homogeneous powder. To this is added 1 drachm of potassium permanganate and 1 drachm boric acid and rubbed well up. Foam up 200 drachms castile soap and 5 drachms chemically pure glycerine and mix it with the foregoing mass, adding by teaspoonful 150 grams of boiling strained honey. The whole mass is again thoroughly rubbed up, adding while doing so 200 drops honey. Finally the mass should be put into a mortar and pounded for an hour and then kneaded with the hands for 2 hours.

Tooth Paste to be put in Collapsible Tubes.—

- Calcium carbonate, levigated..... 100 parts
Cuttlefish bone, in fine powder..... 25 parts
Castile soap, old white, powdered..... 25 parts
Tincture of carmine, ammoniated..... 4 parts
Simple syrup..... 25 parts